Mailing Address:
National Life Records Center
Drawer 20
Montpelier, VT 05620-3201

Location:
National Life Records Center Building
Montpelier, Vermont

State of Vermont
Water Resources Board

Tel: (802) 828-3309

March 28, 2000

Bill B
Bill W
I have packet when we are ready
JERRY

Ms. Mindy S. Lubber
Regional Administrator
Environmental Protection Agency
John F. Kennedy Building
Boston, MA 02203

Dear Ms. Lubber:

The Vermont Water Resources Board has recently adopted amendments to the Vermont Water Quality Standards. These amendments were adopted in accordance with Vermont law on March 14, 2000 and will take effect on April 1, 2000. Enclosed are three copies of the amended Standards as well as a Certificate of Legal Authority prepared by the Office of the Vermont Attorney General.

Please consider this submittal as a formal request for approval of these amendments as required by 40 CFR part 131.5.

Finally, I'd like to take this opportunity to express the Water Resources Board's congratulations on your recent appointment as Regional Administrator. We look forward to continuing our cordial relationship with the Region I staff and look forward to meeting you.

Please let me know if you have any questions regarding this matter.

Sincerely,

William A. Bartlett
Executive Officer

kgd

Enclosures

cc: John Kassel, Secretary, Agency of Natural Resources
Andy Raubvogel, General Counsel, Agency of Natural Resources
Canute Dalmasse, Commissioner, Department of Environmental Conservation
Susan Woods, NEIWPCC
Gerald Potamis, Vermont State Program Manager, U.S.EPA

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MEMORANDUM

TO: Gerald Potamis, EPA, Vermont Program Unit Coordinator

FROM: William Bartlett, Executive Officer

RE: Amendment to the Vermont Water Quality Standards; LaPlatte River Fish Habitat Designation

DATE: April 6, 2000

On March 28, 2000, I sent a letter to Ms. Mindy Lubber, newly appointed Regional Administrator for EPA Region I, seeking review and approval of revised Vermont Water Quality Standards. Attached to that letter were three copies of the revised Vermont Water Quality Standards. This memo clarifies that the most recent amendments to the Vermont Water Quality Standards consist of only a revision to Appendix A in which the Board designates fish habitat types for Vermont waters. The change adopted by the Board at its March 14, 2000 Board meeting and effective April 1, 2000, is a seasonal redesignation of the fish habitat type for a segment of the LaPlatte River near Hinesburg, Vermont from a cold water fish habitat to a warm water fish habitat. There are no other changes to the Vermont Water Quality Standards in the most recent amendments. Should you wish to discuss this matter further, do not hesitate to contact Board counsel Joe Minadeo, who staffed the rulemaking proceeding that resulted in this change. Joe may be contacted directly by phone at (802) 828-3305 or via email at jminadeo@envboard.state.vt.us .

Post-it® Fax Note 7671	Date 4/6/00	# of pages ▶ 1
To Gerald Potamis	From Bill Bartlett	
Co./Dept.	Co.	
Phone #	Phone # Call me if this	
Fax # 617-918-1505	Fax # doesn't do the trick!	

CERTIFICATE OF LEGAL AUTHORITY

TO WHOM IT MAY CONCERN:

This is to certify that the attached amendments to the Vermont Water Quality Standards were duly adopted by the Vermont Water Resources Board pursuant to state law, specifically 3 V.S.A. §§ 831-849, on March 14, 2000.

William H. Sorrell
Attorney General

By: Wm E. Griffin
WILLIAM E. GRIFFIN
Chief Assistant
Attorney General

DATED: 3-20-00

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DATED: 3-20-00

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Vermont Water Quality Standards

Adopted March 14, 2000
Effective April 1, 2000

TABLE OF CONTENTS

Chapter 1 GENERAL POLICY

Section 1-01 Applicability and Definitions

A. Applicability

1. Pursuant 10 V.S.A. Chapter 47, after the classification of any waters has been established those waters shall be managed by the Secretary in order to obtain and maintain the classification. The Secretary may enforce a classification and these rules against any person affected thereby who, with notice of the classification has failed to comply.

2. Concerning any application filed with the Secretary, the Water Quality Standards at the time of the filing shall apply. These Water Quality Standards shall apply to those applications, including applications for the renewal of existing approvals, that are filed on or after the date upon which the amended standards become effective and to all other activities that occur after that date. These rules shall apply to all "waters of the United States" as defined in 40 C.F.R. § 122.2 (1995). Application of these rules to waters of the United States shall not require the issuance of a state or federal permit, license, certification or approval for discharges or activities where no such permit, license, certification or approval requirement exists under applicable state or federal law, including, but not limited to, discharges and activities that satisfy the exemptions and exclusions set forth at 40 C.F.R. § 122.3 and § 232.3 (1995).

3. In the event any of these rules, or any portion thereof, is found by a court or competent jurisdiction to be illegal or void, the remainder thereof shall be deemed unaffected and shall continue in full force and effect.

B. Definitions

For the purposes of these Water Quality Standards, the terms below shall have the following meanings unless a different meaning clearly appears from the context.

1. **Accepted agricultural or silvicultural practices** means those land management practices adopted by the commissioners of agriculture, food and markets and forests, parks and recreation respectively in accordance with applicable state law.

2. **Act** means the "Vermont Water Pollution Control Act," 10 V.S.A., Chapter 47.

3. **Applicable water quality criteria** means all criteria specified in §§ 3-01, 3-05, 3-06 as well as those specified in §§ 3-02(B), and 3-03(B) are applicable to the classification of the waters in question.

4. **Application** - means any request for a permit, certification or approval required by state or federal law filed with and deemed complete by the Secretary.

5. **Aquatic biota** means all organisms that spend all or part of their life cycle in or on the water.

6. **Assimilative capacity** means a measure of the capacity of the receiving waters to assimilate wastes without lowering their quality below the applicable water quality criteria.

7. **Background conditions** means conditions that exist in the absence of human or cultural influences or conditions due to human or cultural influences that are not subject to regulation or management under the Act or under 6 V.S.A., Chapter 215.

8. **Basin Plan** means a plan prepared by the Secretary for each of Vermont's 17 basins (see Chapter 4 of these rules) in conjunction with the basin planning process required by § 303(e) of the Federal Clean Water Act and 40 CFR Part 131, 10 V.S.A. § 1251 (17).

9. **Beneficial values or uses** means any value or use, whether existing or not, that is specified in the management objectives for each class of water as set forth in §§ 3-02(A), and 3-03(A) of these rules.

10. **Best Management Practices** means a practice or combination of practices that may be necessary, in addition to any applicable Accepted Agricultural or Silvicultural Practices, to prevent or reduce pollution from nonpoint source wastes to a level consistent with the applicable provisions of these rules.

11. **Board** means the Vermont Water Resources Board, 10 V.S.A. § 1251(1).

12. **Classification** means the water quality classification designated for a specific body of water in accordance with the provisions of 10 V.S.A. § 1253.

13. **Discharge** means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into the waters of the State, 10 V.S.A. § 1251(2).

14. **EPA** means the U.S. Environmental Protection Agency.

15. **Existing discharge** means any discharge to the extent authorized by a valid permit issued under the provisions of 10 V.S.A. § 1263 or § 1265 as of January 7, 1985.

16. **Existing use or existing water use** means those uses which have actually occurred on or after November 28, 1975, in or on a water body whether or not the uses are included in the standard for classification of the particular water body.

17. **Groundwater** means water below the land surface, 10 V.S.A. § 1410 (b)(1).

18. **Indirect discharge** means any discharge to groundwater, whether subsurface, land-based or otherwise, 10 V.S.A. § 1251(15).

19. **Low Median Monthly Flow** means the median monthly flow for that month with the lowest median monthly flow.

20. **Median Monthly Flow** means the median flow for each calendar month computed by ranking daily flows and selecting the middle value.

21. **Median Annual Flow** means that mean daily flow which is equalled or exceeded 50 percent of the time.

22. **Mixing zone** means a length or area within the waters of the state required for the dispersion and dilution of waste discharges adequately treated to meet federal and state treatment requirements and within which it is recognized that specific water uses or water quality criteria associated with the assigned classification for such waters may not be realized. The mixing zone shall not extend more than 200 feet from the point of discharge, 10 V.S.A. § 1251(6).

23. **New Discharge** means any discharge not authorized under the provisions of 10 V.S.A. § 1263 as of January 7, 1985 or any increased pollutant loading or demand on the assimilative capacity of the receiving waters from an existing discharge that requires the issuance of a new or amended permit.

24. **Nonpoint source waste** means waste that reaches the waters of the state via direct or indirect discharge in a diffuse manner from sources including, but not limited to, overland runoff from construction sites, or as a result of agricultural or silvicultural practices.

25. **Nonpolluting waste** means wastes that prior to treatment does not have the potential to result in an undue adverse effect on any existing use, beneficial value or use, or the quality of the receiving waters.

26. **Permit** means a Discharge Permit issued in accordance with the provisions of 10 V.S.A. § 1263 and any other permit issued by the Secretary or the Commissioner of the Department of Environmental Conservation that affect water quality.

27. **Person** means an individual, partnership, public or private corporation, municipality, institution, or agency of the state or federal government, including any officer or governing or managing body of a partnership, association, firm or corporation, 10 V.S.A. § 1251(8).

28. **Public Interest** means that which shall be for the greatest benefit to the people of the state as determined by the Board in accordance with the criteria set forth in subsection (e) of § 1253 of the Act.

29. **Publicly owned treatment works** means any government owned device or system used in the storage, treatment, disposal or recycling of wastes.

30. **Receiving waters** means all waters adjacent to a discharge and all adjacent or downstream waters whose quality may be affected by that discharge.

31. **Seven Day Low Flow, Ten Year Return Period (7Q10)** means that instantaneous flow equal to the lowest mean flow for seven consecutive days that has a 10% chance of occurring in any given year.

32. **Secretary** means the Secretary of the Agency of Natural Resources or the Secretary's duly authorized representative.

33. **Stormwater runoff** means natural precipitation that does not infiltrate into the soil, including any material dissolved or suspended in such water. Stormwater runoff does not include wastes from combined sewer overflows.

34. **Toxic wastes** means those wastes or combinations of wastes which, after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion

through food chains, will, on the basis of available information cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological or reproductive malfunctions or physical deformations in such organisms or their offspring.

35. **Undue Adverse Effect.** This phrase shall have its common meaning. In determining undue adverse effect, the Secretary is authorized to make case specific judgements in applying these rules. In making such judgments, the water quality policy set forth in § 1-02, the classification of the waters and any other applicable provisions of these rules shall be considered. Except where the context clearly indicates otherwise, applications or interpretations that are less stringent than the specific provisions of these rules shall not be allowed.

36. **Waste** means effluent, sewage, or any substance or material, liquid, gaseous, solid or radioactive, including heated liquids, whether or not harmful or deleterious to waters, 10 V.S.A. § 1251(12).

37. **Waste Management Zone** means a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge, 10 V.S.A. § 1251(16).

38. **Waters and Waters of the State** includes any river, stream, creek, brook, reservoir, pond, lake, spring and any body of surface water, artificial or natural, which is contained within, flows through or borders upon the State of Vermont or any portion thereof. 10 V.S.A. § 1251(13)

C. Management of waters of the state

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Act (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the State. This exclusion applies only to man-made bodies of water which neither were originally created in the waters of the State (such as disposal area in wetlands) nor resulted from the impoundment of waters of the State.

Surface waters created exclusively by rainfall or snowmelt events, such as puddles and overland flow, that are so temporary

in nature that they do not support the beneficial values and uses protected under these rules are not considered waters of the State.

Section 1-02 General Policy

A. Water Quality Policy 10 V.S.A. § 1250

It is the policy of the State of Vermont to:

1. protect and enhance the quality, character and usefulness of its surface waters and to assure the public health;

2. maintain the purity of drinking water;

3. control the discharge of wastes to the waters of the State, prevent degradation of high quality waters and prevent, abate or control all activities harmful to water quality;

4. assure the maintenance of water quality necessary to sustain existing aquatic communities;

5. provide clear, consistent and enforceable standards for the permitting and management of discharges;

6. protect from risk and preserve in their natural state certain high quality waters including fragile high-altitude waters, and the ecosystems they sustain;

7. manage the waters of the State to promote a healthy and prosperous agricultural community, to increase the opportunities for use of the state's forest, parks and recreational facilities, and to allow beneficial and environmentally sound development.

It is further the policy of the state to seek over the long term to upgrade the quality of waters and to reduce existing risks to water quality.

B. Basin Planning

The Secretary is required by federal law to adopt basin plans. Such plans inventory the causes and sources of pollution that impair, or threaten to impair, beneficial values and uses of the waters. In addition basin plans establish a strategy to improve or restore the beneficial values and uses consistent with the waters classification under these rules. The Secretary is required by state law to revise all 17 basins plans by January 1, 2000. At least one basin plan shall be completed per year beginning in 1992. As part of the basin planning process, public

participation is sought to identify problems and solutions of high public interest. Basin plans serve as the guide for how various sources of pollution within each basin will need to be managed to achieve compliance with the Vermont Water Quality Standards and the Vermont water quality policy (10 V.S.A. § 1250).

Each basin plan will identify strategies by which to allocate levels of pollution between various sources as well as between individual discharges.

Section 1-03. Anti-Degradation Policy

A. General Policy

The Board shall establish water quality classifications in accordance with the statutory provisions of the Act and in a manner consistent with §§ 1-02 and 1-03 of these rules. To the greatest extent possible the classification of the waters shall identify existing uses, background conditions, and the degree of water quality to be obtained and maintained. Existing water quality classifications shall be maintained unless the Board, after a public hearing, finds that they are contrary to the public interest except as provided for in 10 V.S.A. § 1253(f).

Those waters whose quality meets or exceeds the water quality criteria specified in §§ 3-01, 3-02 and 3-03 of these rules and whose quality makes an important contribution to the propagation or survival of any beneficial species of aquatic biota at any period in their life history within any of the 17 planning basins identified in Chapter 4 of these rules, constitute high quality waters that have significant ecological value and therefore are eligible for reclassification to Class A in accordance with the provisions of 10 V.S.A. §§ 1253(c) and 1253(f).

The aquatic biota shall be considered to have been significantly altered whenever a discharge or combination of discharges results in a change in the number or diversity of aquatic biota that exceeds the range of natural variation within the receiving waters where such a change results in a measurable alteration of the essential biological characteristics of the receiving waters. The natural variation of aquatic biota shall be determined by sampling and statistical protocols established by the Secretary as provided for in § 2-01(f) of these rules.

The waters of the State shall be managed in accordance with the Water Quality Standards to protect, maintain and improve water quality in such a manner that the beneficial values and uses associated with their classification are attained. All waters, except mixing zones, shall be managed so that, at a

minimum, a level of water quality compatible with all beneficial values and uses associated with the assigned classification are obtained and maintained.

B. Protection of Existing Uses

1. General

Existing water uses and the level of water quality necessary to protect those existing uses shall be maintained and protected. Determinations of what constitutes an existing water use on a particular water body shall be made on a case-by-case basis by the Secretary. In making a determination of the uses to be protected and maintained, the Secretary shall consider the beneficial values or uses for that water body and:

a. Fish and aquatic biota present in the water body;

b. Wildlife that utilize the water body;

c. Habitat, including wetlands, within a water body supporting existing populations of fish, aquatic biota, wildlife, or plant life that is maintained by the water body;

d. The use of the water body for recreation in or on the water, fishing, water supply, or commercial activity that depends directly on the preservation of an existing level of water quality. Use of the water body to receive or transport discharges of waste is not considered an existing use for purposes of this anti-degradation policy; and

e. Any other evidence which, for paragraph (a), (b) and (c) above, demonstrates their ecological significance because of their role or importance in the functioning of the ecosystem or their rarity and, for paragraph (d) above demonstrates its historical or social significance.

2. Discharge Permits and Water Quality Certifications

The Secretary may only issue a discharge permit pursuant to 10 V.S.A. § 1263, or approve a water quality certification pursuant to the United States Clean Water Act, Section 401, Public Law 92-500, as amended, when the Secretary finds that:

a. The existing water use involves use of the water body by aquatic biota, fish or wildlife, and the proposed activity would not have a significant impact on those values. For purpose of this provision, significant impact means: Impairing the viability of the existing population, including significant impairment to growth and reproduction or an alteration of the habitat which impairs viability of the existing population; or

b. Where the existing water use involves use of the water body for recreation in or on the water, fishing, water supply or commercial enterprises that depend directly on the preservation of an existing level of water quality, the proposed activity would not result in significant degradation of the existing use.

C. Protection of High Quality Waters

For all waters where the existing quality generally exceeds any of the applicable water quality criteria specified in Chapter 3 of these rules that high quality shall be maintained and protected in the public interest to the fullest extent possible in accordance with the provisions of this section.

1. Consistent with the requirements set forth in subsection C(2) below, a limited reduction in the higher quality of such waters may be allowed only when it is shown that:

   a. The adverse economic or social impacts on the people of the state specifically resulting from the maintenance of the higher quality of the waters are substantial and widespread, and

   b. Such adverse impacts are not warranted by the economic, social and other benefits to the people of the state resulting from the maintenance of such a higher level of water quality.

2. Any decision to allow a limited reduction in high quality waters shall be consistent with the following requirements:

   a. Only that degree of reduction in the high quality waters that is necessary to comply with the above criteria, shall be allowed, and

   b. That degree of water quality necessary to maintain and protect all existing uses as well as all applicable water quality criteria of the receiving waters shall be maintained.

D. Protection of Outstanding Resource Waters

The Board may under 10 V.S.A. § 1424a designate certain waters as Outstanding Resource Waters. Where the Board so designates such waters because of their water quality values, their existing high quality shall be protected and maintained.

E. Indirect Discharges of Sewage

The anti-degradation requirements of this rule shall be satisfied whenever the Secretary finds that a proposed indirect discharge of sewage into a Class B body of water:

1. will not significantly alter the aquatic biota in the receiving waters, and

2. will not pose more than a negligible risk to public health, and

3. will be consistent with existing and potential beneficial uses of the waters, and

4. will not cause a violation of the water quality standards.

Section 1-04. Discharge Policy

A. Discharge Criteria

In addition to the other provisions of these rules, new discharges of wastes may be allowed only when all the following criteria are met:

1. The proposed discharge is in conformance with all applicable provisions of these rules including the classification of the receiving waters adopted by the Board as set forth in Chapter 4 of these rules.

2. There is no alternative method of, or location for, waste disposal that would have a lesser impact on water quality including the quality of groundwater, or if there is such an alternative method or location, it would be clearly unreasonable to require its use.

3. The design and operation of any waste treatment or disposal facility or the use of land management practices required under 6 V.S.A. Chapter 215 or Section 2-04 of these rules is adequate and sufficiently reliable to protect all beneficial values and uses and to insure compliance with these rules and with all applicable state and federal treatment requirements and effluent limitations.

4. Except as provided for in 10 V.S.A. § 1259(d) and (f), the discharge of wastes other than nonpolluting wastes and stormwater runoff is prohibited in Class A waters regardless of the degree of treatment provided.

5. Except as provided for in 10 V.S.A. § 1259 the discharge of wastes that, prior to treatment, contained organisms pathogenic to human beings into Class A or Class B waters is prohibited.

6. The receiving waters will have sufficient assimilative capacity to accommodate the proposed discharge.

7. Assimilative capacity has been allocated to the proposed discharge consistent with the classification in Chapter 4 of these rules.

8. The withdrawal of water from, or the discharge of wastes to the thermocline or hypolimnion of any lake in a manner that may result in an undue adverse effect on any existing use or on any beneficial value or use is prohibited.

9. The indirect discharge of sewage into Class B waters will not pose more than a negligible risk to public health. Compliance with this criterion shall include an assessment of both the level and reliability of treatment achieved and the impact of the discharge on the water quality of the receiving waters.

B. Assimilative Capacity

The capacity of the waters of the State to assimilate both the discharge of wastes and the impact of other activities that may adversely affect water quality, and at the same time to be maintained at a level of water quality that is compatible with their classification, is finite. A portion of the assimilative capacity may be held in reserve to provide for future needs, including the abatement of future sources of pollution and future social and economic development.

Accordingly, the assimilative capacity of the waters of the State shall be carefully allocated in accordance with the "Wasteload Allocation Process" as adopted by the Secretary.

Section 1-05. Interpretation

Formal interpretation of these rules may be obtained by a request for either an advisory opinion regarding the applicability of any provision of these rules from the Board's Executive Officer or a declaratory ruling from the Board as provided for in the Board's Rules

of Procedure. Informal interpretations by the Secretary and advisory opinions by the Executive Officer may be brought to the Board by means of a petition for a declaratory ruling by any person demonstrating a stake in the outcome.

Declaratory rulings by the Board may be appealed to the Vermont Supreme Court under the provisions of 3 V.S.A. § 808.

Chapter 2 APPLICATION OF STANDARDS

Section 2-01 Sampling and Analysis

All numeric water quality criteria shall be applied by rounding to the nearest significant number in accordance with standard mathematic practice. For the purposes of these rules, sample collection, preservation, handling and analysis shall conform as closely as practicable to methods established in the most current edition or publication of any of the following sources:

(a) "Standard Methods For the Examination of Water and Wastewaters," Public Health Association, New York.

(b) "American Society For Testing and Materials," part 23, "Water; Atmospheric Analysis," American Society For Testing and Materials.

(c) "Methods For Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency.

(d) "Microbiological Methods for Monitoring the Environment - Water and Wastes," U.S. Environmental Protection Agency.

(e) The "Quality Assurance Program and Project Plan" prepared by the Secretary and as approved by EPA.

(f) Any applicable practice or procedure adopted by the Secretary under the provisions of 3 V.S.A. § 835 or any rule adopted as part of the "Vermont Water Pollution Control Permit Regulations" under the provisions of 3 V.S.A. § 836.

Section 2-02 Hydrology

A. Natural Flow Conditions

Where the natural flow regime is not controlled or substantially influenced by man-made structures or devices, compliance with the applicable water quality criteria shall be calculated on the basis of 7Q10 flow values unless another flow

value is specified in Section 3 of these rules. This rule shall not be construed to allow less than normal design operation of any treatment facility during periods of low stream flow or to otherwise waive the terms of any permit issued under the Act.

B. Artificial Flow Conditions

The flow of waters shall not be controlled or substantially influenced by man-made structures or devices in a manner that would result in an undue adverse effect on any existing use, beneficial value or use or result in a level of water quality that does not comply with these rules. The Secretary shall cooperate with appropriate federal, state and private interests in achieving voluntary agreements regarding the maintenance of those minimum flows or when necessary require minimum flows as provided for in 10 V.S.A. § 1003 to protect the beneficial values and uses associated with the classification of the receiving waters.

For waters whose natural flow regime is controlled by man-made structures and where there is a minimum flow agreement/requirement, compliance with the applicable water quality criteria shall be calculated on the basis of 7Q10 flow values, unless another flow value is specified in Section 3 of these rules, or the agreed/required minimum flow whichever is less.

In the absence of a minimum flow agreement/requirement, the water quality criteria shall apply at the absolute low flow resulting from flow regulation, or 7Q10, whichever is less.

Section 2-03 Mixing Zones

A. Designation

Mixing zones shall not be created in any Class A water. In Class B waters the Secretary may, in conjunction with the issuance of a permit, designate a specific portion of the receiving waters not exceeding 200 feet from the point of discharge as a mixing zone for any waste that has been properly treated to comply with all applicable state and federal treatment requirements and effluent limitations. Within any mixing zone the Secretary may, in accordance with the terms of a permit, waive the provisions of §§ 1-03, 3-01, and 3-03(B), provided that the quality of the waters downstream of the mixing zone complies with all applicable provisions of these rules.

B. Mixing Zone Criteria

The Secretary shall insure that conditions within any mixing zone shall:

1. Not create a public health hazard, and

2. Not constitute a barrier to the passage or migration of fish or result in an undue adverse effect on fish, aquatic biota or wildlife, and

3. Not interfere with any existing use of the waters.

Section 2-04. Nonpoint Source Wastes, Investigations Studies or Scientific Research

A. Nonpoint Source Discharges

It is the policy of the State of Vermont to recognize that certain wastes from nonpoint sources including, but not limited to those from agricultural or silvicultural practices are of such a nature that strategies developed in the basin planning process represent a practicable basis for achieving compliance with these rules when required by the Act or by 6 V.S.A. Chapter 215. The requirements of these rules for discharges of any nonpoint source wastes shall be presumed to be satisfied when the activity producing the discharge:

1. Is conducted in accordance with accepted agricultural or silvicultural practices, or appropriate management practices, adopted for activities other than agriculture or silviculture; and

2. Does not result in an undue adverse effect on any beneficial value or use or result in irreversible damage to the waters of the State; and

3. Is consistent with the strategy for managing nonpoint source wastes within any applicable basin plan.

Any presumption provided by this section is invalidated when a specific water quality analysis demonstrates that there is a violation of these rules.

In implementing this policy, the Secretary and the Commissioner of the Department of Agriculture, Food and Markets are encouraged to exercise the full range of discretion authorized by the Act and 6 V.S.A. Chapter 215 and to manage discharges of nonpoint source wastes in as cost-effective a manner as possible consistent with the provisions of these rules.

Where required, monitoring to determine compliance with water quality criteria shall occur in-stream at a point 200 feet downstream from the nearest point of discharge for nonpoint source wastes.

B. Limited Duration Activities

1. Regulated Activities

It is the policy of the State of Vermont to recognize that certain activities that may cause a point source discharge (that may cause a direct dircharge) of limited duration may cause temporary, technical violations of one or more of the water quality criteria specified in Chapter 3. These limited duration activities are nevertheless subject to regulation under Vermont statutes to control impacts on water quality. Such temporary technical violations when allowed under this provision shall be authorized in writing subject to such terms and conditions as the Secretary may prescribe for a specified period of time. In no event shall the activity create an undue adverse effect on existing uses or on the beneficial values and uses of the receiving waters.

2. Investigations, Studies or Scientific Research

The Secretary may, by written authorization, waive the requirements of these rules in order to conduct investigations, studies, or scientific research which the Secretary considers to be necessary either for the proper administration of the Act or for the protection or management of the waters of the State of Vermont. Any such activity must not cause an undue adverse effect on any beneficial value or use or irreversible damage to the waters of the State.

Section 2-05 Stormwater Management

In accordance with the provisions of 10 V.S.A. § 1264, it is the policy of the State of Vermont that these rules be implemented in a manner that recognizes the inherent differences between the discharge of stormwater runoff and other discharges.

In implementing this policy, the Secretary is encouraged to exercise the full range of discretion authorized by the Act and shall manage discharges of stormwater runoff in as cost effective a manner as possible, consistent with these rules and any applicable basin plan.

Section 2-06 Waste Management Zones

A. Designation

The designation of waste management zones is provided for in 10 V.S.A. § 1252(b)-(d). In Class B waters the Secretary may, in conjunction with the issuance of a permit for the direct discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings, designate a specific portion of the receiving waters as a waste management zone when the criteria in subsection B of this section are met. Waste management zones shall not be created in any Class A water.

B. Waste Management Zone Criteria

The Secretary shall insure that, in addition to complying with all other applicable provisions of the statute and these rules, any waste management zone meets the following criteria:

1. It shall be the minimum length necessary to accommodate the authorized discharge.

2. It shall be consistent with the anti-degradation policy (Section 1-03) of these rules, including but not limited to the provisions of that policy pertaining to the maintenance and protection of all existing and beneficial values and uses.

3. It shall not create a significantly increased risk to public health within the zone.

4. It will be located and managed so as to not result in more than a negligible increased risk to public health adjacent to or downstream of the waste management zone.

5. It will not constitute a barrier to the passage or migration of fish or result in an undue adverse effect on fish, aquatic biota or wildlife.

Chapter 3 DETERMINATION OF CRITERIA

Section 3-01 Water Quality Criteria - General

A. Background Conditions

In those waters where background conditions result in an in-stream level of water quality below any applicable water quality criterion established in this chapter, maintenance of the in-stream background condition may be allowed when specifically authorized by the terms of a permit, provided that the quality of the receiving waters is not reduced.

B. General Criteria

Except as provided for in § 3-01(A), the following water quality criteria shall be achieved as in-stream conditions in all waters, except mixing zones, regardless of their classification:

1. Dissolved Oxygen

a. **Cold Water Fish Habitat** - Not less than 7 mg/l or 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonoids in areas that the Secretary determines are salmonoid spawning or nursery areas important to the establishment or maintenance of the fishery resource. Not less than 6 mg/l or 70 percent saturation at all times in all other waters designated as a cold water fish habitat.

b. **Warm Water Fish Habitat** - Not less than 5 mg/l or 60 percent saturation at all times.

2. Temperature

a. **General**

The change or rate of change in temperature, either upward or downward, shall be controlled so as to prevent any undue adverse effect on aquatic biota and wildlife.

b. **Cold Water Fish Habitat**

The total increase in temperature from background conditions due to all discharges and activities shall not at any time exceed 1.0°F except as provided for in paragraph (d) below.

c. **Warm Water Fish Habitat**

The total increase in temperature from background conditions due to all discharges and activities shall not at any time exceed the values derived from tables 1 or 2 except as provided for in paragraph (d) below.

Table 1. Rivers, Streams, Brooks and Creeks

Background temperature	Total allowable increase above background temperature
Above 66°F.	1°F.
63° to 66°F.	2°F.
59° to 62°F.	3°F.
55° to 58°F.	4°F.
Below 55°F.	5°F.

Table 2. Lakes, Ponds, Reservoirs and other waters

Background Temperature	Total allowable increase above background temperature
Above 60°F.	1°F
50°F - 60°F.	2°F
Below 50°F.	3°F

d. Assimilation of Thermal Wastes

The Secretary may, by permit condition, specify temperature criteria that exceed the values specified above in order to authorize discharges of thermal wastes when it is shown that:

(1) The discharge will comply with all other applicable provisions of these rules.

(2) A mixing zone of 200 feet in length is not adequate to provide for assimilation of the thermal waste.

(3) After taking into account the interaction of thermal effects and other wastes, that the higher temperature will not result in thermal shock or have an undue adverse effect on aquatic biota, fish or wildlife or any beneficial values or uses associated with the classification of the receiving waters.

3. Phosphorus

a. All waters - general policy

There shall be no increase, in any waters, of total phosphorus above background conditions that may contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that has an undue adverse effect on any beneficial values or uses of any adjacent or downstream waters.

b. Upland Streams

In addition to compliance with the general policy above, for all streams above 2,500 feet in elevation total phosphorus shall not exceed 0.010 mg/l at low median monthly flow.

c. Lake Champlain and Lake Memphremagog

In Lake Champlain and Lake Memphremagog, there shall be no significant increase over currently permitted phosphorus loadings. "No significant increase" may be defined by the Secretary as part of the applicable basin plan to allow new or increased discharges of phosphorus when the permit for such discharges provides for a corresponding reduction in phosphorus loadings from other sources to the lake segment in question.

Compliance with implementation measures adopted or approved by the Secretary as part of a basin plan reasonably designed to achieve these criteria by January 1, 1998, shall be considered compliance with the criteria for all purposes.

All discharges into each of the lake segments identified below, or into tributaries within the planning basin, shall comply with permit limitations and any other measure adopted or approved by the Secretary in furtherance of a plan reasonably designed to achieve the following criteria by January 1, 1998:

Lake Segment (see Appendix B)	Phosphorus Criterion
Lake Champlain	
Main Lake	0.010 mg/l as P
Malletts Bay	0.010 mg/l
Burlington Bay	0.014 mg/l
Shelburne Bay	0.014 mg/l
Northeast Arm	0.014 mg/l
Isle La Motte	0.014 mg/l
Otter Creek	0.014 mg/l
Port Henry	0.014 mg/l
St. Albans Bay	0.017 mg/l
Missisquoi Bay	0.025 mg/l
South Lake A	0.025 mg/l
South Lake B	0.054 mg/l
Lake Memphremagog	
Main Lake	0.014 mg/l
South Bay	0.025 mg/l

The above criteria shall be achieved as the summer (June-August) mean total phosphorus concentration in the photosynthetic depth (euphotic) zone in central, open water areas of each lake segment in accordance with basin plans and wasteload allocations adopted by the Secretary not later than January 1, 1998.

d. **Lakes or ponds that have drainage areas of less than 40 square miles and a drainage area to surface area ratio of less than 500 and their tributaries**.

In addition to compliance with the general policy above, there shall be no significant increase over background conditions in total phosphorous. Discharges to tributaries which do not increase in-stream background conditions by more than 0.001 mg/l at low median monthly flow, or discharges to lakes or ponds which do not increase total phosphorous as measured in the groundwater 100 feet from the mean water level of the lake or pond by more than 0.001 mg/l will be presumed to meet this requirement.

The Secretary may as part of the applicable basin plan define "no significant increase" to allow new or increased discharges of phosphorus on and after January 1, 1994, when the permit for such discharges provides for a corresponding reduction in phosphorus loadings to the receiving waters in question.

4. **Nitrates**

a. **Rivers, streams, brooks and creeks**

(1) Not to exceed 0.20 mg/l, as nitrate-nitrogen (NO_3-N) at flows exceeding low median monthly flows, in Class A waters above 2,500 feet altitude, National Geodetic Vertical Datum.

(2) Not to exceed 2.0 mg/l as NO_3-N at flows exceeding low median monthly flows, in Class A waters at or below 2,500 feet altitude, National Geodetic Vertical Datum.

(3) Not to exceed 5.0 mg/l as NO_3-N at flows exceeding low median monthly flows, in Class B waters.

b. **Lakes, Ponds and Reservoirs**

Not to exceed 5.0 mg/l as NO_3-N regardless of classification.

In addition to the above numeric criteria, there shall be no increase of nitrates in any waters above background conditions that would contribute to the acceleration of eutrophication, or the stimulation of the growth of aquatic biota, in a manner that has an undue adverse effect on any beneficial values or uses of any adjacent or downstream waters.

5. **Aquatic Habitat** - No change from background conditions that would have an undue adverse effect on the composition of the aquatic biota, the physical or chemical nature of the substrate or the species composition or propagation of fishes.

6. **Sludge deposits or solid refuse** - None

7. **Settleable solids, floating solids, oil, grease, scum, or total suspended solids** - None in such concentrations or combinations that would have an undue adverse effect on any beneficial values or uses.

8. **Alkalinity** - Not less than 20 mg/l as CaC03.

9. **pH** - Values shall be maintained within the range of 6.5 and 8.5. The change, or rate of change, either upward or downward shall not result in an undue adverse effect on aquatic biota, fish or wildlife.

10. Toxic substances

a. General

Where necessary to protect an existing or reasonably anticipated beneficial use the waters of the State shall be managed to prevent the discharge of toxic substances in concentrations, quantities or combinations that based on the beneficial values and uses associated with the classification of the receiving waters, exceed:

(1) For toxic substances that are carcinogenic, a maximum individual lifetime risk to human health greater than 10^{-6}, or

(2) For toxic substances that are noncarcinogenic, a maximum individual life time risk of no adverse effect to human health, or

(3) Acute or chronic toxicity to aquatic biota, fish or wildlife.

The Board must reconsider these criteria and revise them if necessary at least every three years following the effective date.

b. Human health based criteria

The human health based toxic pollutant criteria listed in Appendix C shall apply at the median annual flow.

c. Aquatic biota based criteria

The aquatic biota based toxic pollutant criteria that result in acute or chronic toxicity listed in Appendix D shall apply at 7Q10 flows.

d. Other toxic substances

Where numeric criteria for a toxic substance are not established by these rules, the Secretary may establish such criteria consistent with general policy in subsection (a.) above, based on the procedures set forth in the Vermont Toxic Discharge Control Strategy (1994).

In establishing such limits the Secretary shall give consideration to the potential for bio-accumulation as well as any antagonistic or synergistic relationship that may exist between the wastes being discharged and the concentration of other wastes or constituents in the receiving waters.

In implementing these criteria, the Secretary should to consider the full range of discretion authorized by the Act and to apply these criteria in as cost effective a manner as possible consistent with the provisions of this subsection.

e. Notwithstanding subsection (a.), if the concentration of a toxic pollutant in any discharge is less than the limit of detection as determined by the Secretary, the toxic pollutant criterion shall be considered not to have been exceeded for that pollutant. The Secretary shall determine the limit of detection based on reasonably available protocols and technology. The Secretary shall adopt a process, through notice and comment rulemaking, by which permit applicants may demonstrate that toxic pollutants, in any discharge which cannot be monitored routinely by reasonably available protocols and technology, will not exceed the water quality criteria. In any case where an applicant cannot make such a demonstration, the process shall also provide for management practices that give reasonable assurance the standards will not be exceeded.

11. Radioactive Substances

The waters of the State shall be managed so as to prevent the discharge of radioactive substances in concentrations, quantities or combinations that may create a significant likelihood of an adverse impact on human health or a risk of acute or chronic toxicity of aquatic biota, fish or wildlife. Unless otherwise required by these rules, the Secretary shall determine limits for discharges containing radioactive substances based on the results of biological toxicity assessments and the appropriate available scientific data, including but not limited to:

(a) The Vermont State Health Regulation, Part 5, Chapter 3 "Radiological Health," effective as of 12/10/77

(b) 10 CFR 50, Appendix I

The discharge of radioactive substances shall not exceed the lowest limits which are reasonably achievable.

Section 3-02 Class A Waters

A. Management Objectives

To achieve and maintain waters with a very high level of water quality that is compatible with the following beneficial values and uses:

1. **Values** - High quality waters that have significant ecological value and water quality of a uniformly excellent character.

2. **Uses** - As a source of public water supply with disinfection when necessary and, when compatible, for the enjoyment of water in its natural condition.

B. Water Quality Criteria for Class A Waters

Except as provided for in § 3-01(A), the following water quality criteria shall be achieved as in-stream conditions in all Class A waters.

1. **Turbidity** - Not to exceed 10 NTU or background conditions, whichever is lower.

2. **Escherichia coli** - Not to exceed 18 organisms/100 ml or background conditions whichever is lower. None attributable to the discharge of wastes.

3. **Color** - No increase from background conditions.

4. **Tastes and Odor** - No increase from background conditions.

Section 3-03. Class B Waters

A. Management Objectives

Class B waters shall be managed to achieve and maintain a high level of quality, that is compatible with the following beneficial values and uses:

1. **Values** - Water of a quality that consistently exhibits good aesthetic value and provides high quality habitat for aquatic biota, fish and wildlife.

2. **Uses** - Public water supply with filtration and disinfection; irrigation and other agricultural uses; swimming, and recreation.

B. Water Quality Criteria for Class B Waters

Except as provided for in § 3-01(A) the following water quality criteria shall be achieved as in-stream conditions in all Class B waters, except mixing zones.

1. **Turbidity**

   a. **Cold Water Fish Habitat** - Not to exceed 10 NTU.

   b. **Warm Water Fish Habitat** - Not to exceed 25 NTU.

2. **Escherichia coli** - Not to exceed 77 organisms/100 ml except that the Secretary may, by permit condition, waive compliance with this criterion during all or any portion of the period between October 31, and April 1, provided that a health hazard is not created. The Secretary shall provide written notice to the Vermont Department of Health prior to issuing a permit waiving compliance with the Escherichia coli criterion.

3. **Color** - Not to exceed 25 standard color units.

4. **Taste and Odor** - None in such concentrations that would have an undue adverse effect on beneficial values or uses or on the taste or odor of fish.

Section 3-04 Fish Habitat Designation

To provide for the protection and management of fisheries, the waters of the State are designated in Appendix A as being either a cold or a warm water fish habitat. Where appropriate, such designations may be seasonal.

Chapter 4 WATER QUALITY CLASSIFICATIONS The classification of all waters has been established by a combination of legislative acts and by classification or reclassification decisions issued by the Board pursuant to 10 V.S.A. § 1253. Those waters reclassified by the Board to Class A shall include all waters within the entire watershed of the reclassified waters unless expressly provided otherwise in the rule. Watershed shall mean that region which contains waters that drain into a particular brook, stream, river, or other body of water.

Section 4-01. Classification of the Batten Kill Walloomsac and Hoosic Basin (Basin 1)

All waters within this basin are Class B except as provided for below:

A. Batten Kill

Waters	Class	Date	Approx. Miles/Acres
An unnamed tributary to Bromle Brook	A	6/30/64	0.5 mile

Description

Village of Manchester water supply (No longer used). The first unnamed tributary to Bromley Brook and all waters within its watershed upstream of the Manchester Water Co. intake. The tributary is the first tributary on the right upstream of Bromley Brook's confluence with Bourn Brook. The intake is approximately 0.5 mile upstream of its juncture with Bromley Brook.

B. Walloomsac River

Basin Brook and Furnace Brook	A	12/23/52	5.0 miles

Village of North Bennington water supply. Basin Brook and all waters within its watershed to and including the North Bennington Reservoir in the Towns of Glastenbury and Shaftsbury. (Furnace Brook is not a water supply).

Bolles Brook	A	7/1/71[1]	5.3 miles

Village of Bennington water supply. That portion of Bolles Brook and all waters within its watershed in the Towns of Glastenbury and Woodford upstream of the Bennington water intake.

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[1] The Water Resources Board did not classify these waters. They are included as a result of the 1949 and 7/1/71 legislation which defined what constituted Class A waters.

Sucker Pond (Lake Hancock) & tributaries	A	12/23/52	70 acres

Village of Bennington water supply. Lake surface and all waters within its watershed in Stamford.

Barney Brook	A	7/1/71[1]	1.3 miles

Village of Bennington water supply. That portion of Barney Brook and all waters within its watershed in the Town of Woodford upstream of the water intake.

Unnamed tributary to South Stream	A	7/1/71[1]	1.0 mile

Village of Bennington water supply. That a portion tributary to South Stream and all waters within its watershed in the Town of Woodford upstream of the water intake in Bennington.

C. **Hoosic River**

Roaring Branch	A	7/1/71[1]	2.3 miles

Town of Bennington Water supply. That portion of Roaring Branch and all waters within its watershed in the Town of Stamford upstream of the water intake in Pownal.

Unnamed tributaries	A	3/6/59	2.9 miles

Village of Pownal water supply. That portion of unnamed tributaries and their watersheds on Mann Hill in the Town of Pownal upstream of the waterintake in Oak Hill Cemetery.

Unnamed tributaries. (Reservoir Hollow Brook and Ladd Brook)[2]	A	3/6/59	(a) 0.8 miles (b) 1.5 miles

Village of North Pownal water supply. (a) Reservoir Hollow Brook and reservoir and all waters within its watershed. (Reservoir is approx. 0.5 mile upstream of the Hoosic River).

Village of Pownal water supply (b) Ladd Brook and all waters within its watershed in the Town of Pownal.

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[2]Previously described as "unnamed tributaries" in the 3/6/59 classification proceedings.

Description

City of Rutland water supply. Unnamed tributary to Cold River and all waters within its watershed upstream of its diversion into the Mendon Brook watershed in Sherburne.

Mendon Brook	A	2/17/61	6.0 miles

City of Rutland water supply. Mendon Brook and all waters within its watershed upstream of the water intake just south of Meadow Lake Drive in the Town of Mendon.

Tenney Brook	A	2/17/61	2.0 miles

Rutland-Mendon Town water supply. Tenney Brook and all waters with its watershed upstream of and including a small intake impoundment.

Rutland City Reservoir	A	Legis.[1]	No Record

City of Rutland water supply. Rutland City Reservoir in Rutland Town and all waters within its watershed in Rutland Town and Mendon.

Moon Brook	A	Legis.[1]	2.0 miles

Rutland-Mendon F.D. #2 water system (Gleason Road System - now abandoned). Moon Brook and all waters within its watershed in Mendon upstream of and including a small intake impoundment.

Unnamed Tributary to Tenney Brook	A	Legis.[1]	1.1 miles

Rutland F.D. #2 (Gleason Road) water system. Unnamed tributary to Tenney Brook and all waters within its watershed in Mendon upstream of the water intake.

Young's Brook	A	2/17/61	2.0 miles

Village of West Rutland water supply (No longer used). Young's Brook and reservoir and all waters within its watershed in West Rutland and Ira upstream of the water intake.

Furnace Brook and Kiln Brook	A	2/17/61	5.5 miles

Village of Proctor water supply (Kiln Brook is the main source, with Furnace Brook used as a backup). Furnace Brook and Kiln Brook and all waters within their watersheds in Chittenden upstream of their confluence.

Sugar Hollow Brook	A	2/17/61	2.0 miles

Description

City of Rutland water supply. Unnamed tributary to Cold River and all waters within its watershed upstream of its diversion into the Mendon Brook watershed in Sherburne.

Mendon Brook	A	2/17/61	6.0 miles

City of Rutland water supply. Mendon Brook and all waters within its watershed upstream of the water intake just south of Meadow Lake Drive in the Town of Mendon.

Tenney Brook	A	2/17/61	2.0 miles

Rutland-Mendon Town water supply. Tenney Brook and all waters with its watershed upstream of and including a small intake impoundment.

Rutland City Reservoir	A	Legis.[1]	No Record

City of Rutland water supply. Rutland City Reservoir in Rutland Town and all waters within its watershed in Rutland Town and Mendon.

Moon Brook	A	Legis.[1]	2.0 miles

Rutland-Mendon F.D. #2 water system (Gleason Road System - now abandoned). Moon Brook and all waters within its watershed in Mendon upstream of and including a small intake impoundment.

Unnamed Tributary to Tenney Brook	A	Legis.[1]	1.1 miles

Rutland F.D. #2 (Gleason Road) water system. Unnamed tributary to Tenney Brook and all waters within its watershed in Mendon upstream of the water intake.

Young's Brook	A	2/17/61	2.0 miles

Village of West Rutland water supply (No longer used). Young's Brook and reservoir and all waters within its watershed in West Rutland and Ira upstream of the water intake.

Furnace Brook and Kiln Brook	A	2/17/61	5.5 miles

Village of Proctor water supply (Kiln Brook is the main source, with Furnace Brook used as a backup). Furnace Brook and Kiln Brook and all waters within their watersheds in Chittenden upstream of their confluence.

Sugar Hollow Brook	A	2/17/61	2.0 miles

Town of Brandon water supply (No longer used). Sugar Hollow Brook and all waters within its watershed in Goshen and Chittenden upstream of the water intake.

Leicester Hollow Brook	A	2/17/61	2.0 miles

Town of Brandon Water Supply (No longer used). Leicester Hollow Brook and all waters within its watershed in Leicester upstream of the water intake.

B. <u>Lower Otter Creek</u>

Brandy Brook	A	11/13/61	1.0 miles

Now or former water supply for Breadloaf School. Brandy Brook and all waters within its watershed.

Unnamed tributary to Beaver Meadow Brook	A	11/13/61	1.3 miles

Village of Bristol water supply. Unnamed tributary to Beaver Meadow Brook and all waters within its watershed upstream of the water intake in Lincoln.

Unnamed tributary to Lewis Creek	A	7/1/71[1]	2.0 miles

Village of Starksboro water supply (No longer used). Unnamed tributary to Lewis Creek and all waters within its watershed in Starksboro upstream of the water intake.

Two unnamed tributaries to Little Otter Creek	A	7/1/71[1]	1.6 and 1.4 miles

City of Vergennes water supply (Not used since 1973). Two unnamed tributaries to Little Otter Creek and all waters with-in their watersheds in Monkton and Bristol upstream of two water intakes.

Notch Brook	A	11/13/61	2.0 miles

Village of Middlebury water supply (Reserved for emergency use). Notch Brook and all waters with-in its watershed upstream of the water intake in Bristol.

Roaring Brook	A	7/1/71[1]	3.3 miles

Wallingford F.D. #1 water supply. Roaring Brook and all waters within its watershed upstream of the water intake.

C. **Entire Basin**

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-04. Classification of the Southern Champlain Basin (Basin #4)

All waters within this basin at or below 2,500 feet altitude National Geodetic Vertical Datum are Class B. All waters within this basin above 2,500 feet altitude, National Geodetic Vertical Datum are Class A. No other waters are Class A.

Section 4-05. Classification of the Northern Champlain Basin (Basin #5)

All waters within this basin are Class B except as provided for below:

A. **Lake Champlain Including Minor Tributaries**

	Class	Date	Approx. Waters Miles/Acres
Milton Pond	A	3/21/68	20 acres Pond only

Description

Village of Milton water supply (No longer used). Milton Pond and all waters within its watershed in Milton.

Indian Brook Reservoir	A	3/21/68	95 acres (Reservoir only)

Former Essex Town water supply (No longer used - sold to developer). Indian Brook Reservoir and all waters within its watershed in Essex Town.

Colchester Pond	A	3/21/68	93 acres Pond only

Village of Colchester water supply (Not used since 1974, but reserved for emergency use). Colchester Pond and all waters within its watershed in the Town of Colchester.

B. **St. Albans Bay**

Mill River	A	6/28/54[1]	62 acres (Reservoir only)

City of St. Albans water supply. Two reservoirs which drain to the Mill River and all waters within their watersheds in the Towns of Fairfax, St. Albans, and Fairfield.

C. **Entire Basin**

All waters located above 2,500 feet altitude National Geodetic Vertical Datum.	A	5/17/86	No Record

Section 4-06. Classification of the Missisquoi Basin (Basin 6)

All waters within this basin are Class B except as provided for below:

A. **Missisquoi River**

Waters	Class	Date	Approx. Miles/Acres
Mountain Brook	A	5/28/70	1.6 and 1.1 miles

Description

Village of North Troy water supply (Reserved for emergency use). Mountain Brook and a tributary and all waters within their watersheds upstream oftwo separate water intakes in Jay.

Coburn Brook Reservoir and tributaries	A	5/28/70	2.0 miles

Village of North Troy water supply (Reserved for emergency use). Coburn Brook and Coburn Brook Reservoir in Westfield and all waters within their watersheds upstream of the water intake in Coburn Brook.

Unnamed tributary to Trout River	A	5/28/70	0.6 mile

Village of East Bershire water supply. Unnamed tributary to the Trout River in Enosburg and all waters within its watershed upstream of the water intake.

Hannah Clark Brook	A	5/28/70	4.0 miles

Village of Montgomery Ctr. water supply (Reserved for emergency use). Hannah Clark Brook in Montgomery and all waters in its watershed upstream of the water intake.

Stanhope Brook	A	5/28/70	5.0 miles

Village Richford water supply. Stanhope Brook in Richford and all waters in its watershed upstream of the water intake.

Trout Brook	A	5/28/70	2.0 miles

Village of Enosburg Falls water supply. (Reserved for emergency use). Trout Brook in Berkshire and all waters within its watershed upstream of the outlet of Enosburg Reservoir.

Loveland Brook	A	7/1/71[1]	2.0 miles

Village of Richford water supply. Loveland Brook in Richford and all waters within its watershed upstream of the water intake.

Black Falls Brook	A	7/1/71[1]	5.0 miles

Village of Montgomery Ctr. (Reserved for emergency use). Black Falls Brook in Montgomery and Richford and all waters within its watershed upstream of the water intake.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No Record

Section 4-07. Classification of the Lamoille Basin (Basin 7)

All waters within this basin are Class B except as provided for below:

A. Lamoille River

Waters	Class	Date	Approx. Miles/Acres
Smith Brook	A	7/1/71[1]	1.6 miles

Description

Village of Johnson water supply. Smith Brook in Johnson and all waters in its watershed upstream of the water intake.

French Hill Brook	A	7/1/71[1]	2.4 miles

Village of Johnson water supply. French Hill Brook in Johnson and all waters in its watershed upstream of the water intake.

Silver Lake	A	2/13/70[1]	30 acres (lake only)

City of St. Albans water supply. Silver Lake and all waters in its watershed in the Towns of Georgia and Fairfax.

Unnamed Tributary to the Lamoille River	A	7/1/71[1]	1.0 mile

Village of Hardwick water supply (No longer used). Unnamed tributary to the Lamoille River and all waters in its watershed in Hardwick upstream of the water intake.

Unnamed Tributary to the Lamoille River	A	7/1/71[1]	0.1 mile

Village of Fairfax water supply (No longer used). Unnamed tributary to the Lamoille River and all waters in its watershed in Fairfax upstream of the water intake.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/27/86	No record

Section 4-08. Classification of the Winooski Basin (Basin 8)

All waters within this basin are Class B except as provided for below:

A. Lower Winooski River

Waters	Class	Date	Approx. miles/acres
Unnamed tributary to the the Winooski River	A	6/9/69[1]	0.5 mile

Description

Not a water supply. Unnamed tributary to the Winooski River and all waters within its watershed. The mouth of the tributary is located approx. ½ mile downstream of the confluence of Alder Brook & the Winooski River.

Unnamed tributary to Alder Brook	A	6/6/69[1]	0.4 mile

Former water supply for Winooski, Essex Center, Essex Jct. & Pinewood Manor (No longer used). Unnamed tributary and all waters within its watershed in Essex.

B. Middle Winooski River

Unnamed tributaries to Brook. Formerly "Thatcher Brk & tribs"	A	5/14/63	2.5 miles

Village of Waterbury water supply. Unnamed tributaries to Thatcher Brook (Known locally to Tyler & Miriam Brooks).

Unnamed tributary to the West Branch of the Little River	A	7/1/71[1]	1.3 miles

Village of Stowe water supply (Reserved for emergency use). An unnamed tributary to the West Branch of the Little River and all waters within its watershed in Stowe to the water intake.

C. Stevens Branch

Martin Brook, Reservoir & Tributaries	A	8/7/69	3.5 miles

City of Barre water supply (Reserved for emergency use). Martin Brook inWilliamstown and all waters within its watershed, including unnamed tributaries, to the water intake.

Bolster Reservoir and tributaries	A	8/7/62	2.0 acres (Res.) & 2.2 miles(tribs)

Old City of Barre water supply. (It has been disconnected). Bolster Reservoir in South Barre and all waters within its watershed including Bolster Reservoir Brook, Pecks Pond and unnamed tributaries.

Thurman W. Dix Reservoir Lower Reservoir & tributaries	A	8/7/62	119 acres & 9.9 miles

City of Barre water supply. Thurman W. Dix Reservoir, Lower Reservoir and all waters within their watersheds in the Towns of Barre and Orange including Orange Brook, Nelson Brook, Nate Smith Brook and unnamed tributaries.

Unnamed brook & tributaries	A	8/7/62	1.4 miles

Old Village of East Barre water supply. (Reserved for emergency use). Unnamed brook and tributaries in the Town of Barre and all waters within their watersheds to the water intake.

Little John & Milne quarries	A	8/7/62	No Record

Emergency Barre Town District #1 water supply for Village of East Barre. (Milne Quarry no longer used). Little John Quarry in Barre Town (Located just south of East Barre Village, at approx. elev. 1380').

Standard & Consolidated Quarries	A	8/7/62	No Record

Barre Town District #3 water supply for Websterville. Quarry Hole #1 in the Town of Barre located at approx. elev. 1420'.

Websterville emergency water supply. Location of quarry unknown.

Old Granite Quarry	A	8/7/62	No Record

Town of Barre Fire District #4 water supply. Standard Quarry in the Town of Barre is the quarry referred to. It is located at approx. elev. 1530'. **Note:** All quarry holes in the Websterville/Graniteville area should be considered as reservoirs. The primary sources are springs and wells. When the wells and springs are overflowing, they are piped to the Standard Quarry. When Standard is full, it goes to the Barclay Quarry, then to the Murphy & Saldi quarries, all by gravity.

Berlin Pond	A	8/7/62	256 acres

City of Montpelier water supply. Berlin Pond upstream of the dam and all waters within its watershed in the Towns of Berlin, Northfield, and Williamstown. The dam is located 300' downstream of where Paine Turnpike crosses the pond.

D. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-09. Classification of the White Basin (Basin 9)

All waters within this basin are Class B except as provided for below:

A. White River

Waters	Class	Date	Approx. Miles/Acres
Farnsworth Brook	A	12/28/77	2.0 miles

Description
Village of East Braintree public water supply. Farnsworth Brook and all waters within its watershed in the Town of Braintree upstream of the water intake.

Lake Casper & Lake John	A	12/28/77	No Record

Village of South Royalton and F.D. #1 water supply. Lake Casper and Lake John and all waters within their watersheds in the Town of Royalton.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No Record

Section 4-10. Classification of the Ottauquechee-Black Basin (Basin 10)

All waters within this basin are Class B except as provided for below:

A. Ottauquechee River

Waters	Class	Date	Approx. miles/acres
Spring and unnamed tributary to the Ottauquechee River	A	11/16/67	0.3 mile

Description

Village of North Hartland water supply (Reserved for emergency use). A spring and unnamed tributary to the Ottauquechee River and all waters within its watershed upstream of the water intake. The spring and brook are located approx. 1 mile north-northwest of North Hartland Village.

Cox, Vandell and Carlton Hill Reservoirs	A	11/16/67	Approx. 2.5 miles (Stream only)

Village of Woodstock water supply (Private. Reserved for emergency use. Carlton Hill no longer in the system). Cox, Vandell and Carlton Hill Reservoirs in the Town of Woodstock and all waters within their watersheds.

Grant Brook (Off Jewell Brook)	A	3/30/66	Approx. 3.2 miles

Village of Ludlow water supply (No longer in use). Grant Brook and all waters within its watershed upstream of the flood control dam.

B. Black River

Springfield Reservoir Brook	A	3/30/66	1.8 miles

Village of Springfield water supply (Reserved for emergency use). Springfield Reservoir Brook and tributaries and all waters in its watershed upstream of Springfield Reservoir.

Springfield Reservoir and tributaries	A	3/30/66	9.8 acres

Village of Springfield water supply (Reserved for emergency use). Springfield Reservoir and all waters within its watershed.

C. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No Record

Section 4-11. Classification of the West-Williams-Saxton Basin (Basin 11)

All waters within this basin are Class B except as provided for below:

A. West-Williams-Saxtons River

Waters	Class	Date	Approx. Miles/Acres
Sunset Lake & Stickney Brook	A	7/26/78	3.0 sq. mi.

Description

Town of Brattleboro water supply. Sunset Lake and Stickney Brook and all waters in their watersheds above the water intake in the Towns of Marlboro, Newfane, and Brattleboro. (Water intake is located at the so-called third dam, a distance of approx. 2.5 miles from Sunset Lake).

Styles Brook	A	7/26/78	1.0 sq.mi.

Stratton Corp. water supply (Reserved for emergency use). Styles Brook and all waters in its watershed above the diversion to Styles Reservoir.

Chester Reservoir & the outlet stream above the water intake.	A	7/26/78	1.0 sq. mi.

Village of Chester water supply (Reserved for emergency use). Chester Reservoir, the outlet stream above the water intake and all waters within their watersheds in the Town of Chester. The water intake is approx. 0.3 mile below the reservoir.

Bolles Brook	A	7/26/78	1.0 sq.mi.

Village of Saxtons River & Vermont Academy water supply (Reserved foremergency use). Bolles Pond Brook and all waters in its watershed above the water intake in the Town of Rockingham.

Kidder Brook & tributaries	A	10/11/89	Approx. 2.5 miles

That portion of Kidder Brook and all its headwaters, including named and unnamed tributaries, beginning in the Town of Stratton at an elevation of 2,500 feet and continuing downstream to its confluence with the North Branch in the Town of Jamaica.

Cobb Brook	A	10/09/91	Approx. 6.0 miles

That portion of Cobb Brook and its tributaries beginning in the Town of Windham at an elevation of 2,500 feet and continuing downstream to its confluence with the West River in the Town of Jamaica.

Upper Reach of the Winhall River	A	10/09/91	7.4 miles

That portion of the upper reach of the Winhall River including the river's two principal headwaters, beginning at an elevation of 2,500' in the Town of Stratton, and continuing downstream a distance of approx. 7.4 miles to the point at which the river crosses the current boundary of the Green Mountain National Forest in the Town of Winhall.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-12. Classification of the Deerfield Basin (Basin 12)

All waters within this basin are Class B except as provided for below:

A. Deerfield River

Waters	Class	Date	Approx. Miles/Acres
Haystack Pond	A	1/27/61	36 acres

Description

Village of Wilmington water supply. Haystack Pond and all waters within its watershed in the Town of Wilmington.

Howe Pond and Howe Pond Brook	A	1/27/61	62 acres

Village of Readsboro water supply. Howe Pond and all waters within its watershed. Howe Pond Brook and all waters within its watershed above the water intake, which is located approx. 1.1 miles downstream from Howe Pond. Both pond and brook are located in the Town of Readsboro.

Cold Brook	A	10/7/96	1.5 miles

That portion of **Cold Brook and its tributaries** between an elevation of 2,500 feet and continuing downstream to its confluence with Mountain Brook in the Town of Dover.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-13. Classification of the Lower Connecticut Basin (Basin 13)

All waters within this basin are Class B except as provided for below:

A. Lower Connecticut River

Waters	Class	Date	Approx. Miles/Acres
Back Pond	A	3/21/68	2.0 acres

Description

Village of Bellows Falls water supply. Back Pond and all water within its watershed, which is diverted to Minards Pond. Back Pond is located .1 mile north-west of Minards Pond in the Town of Rockingham.

Ellis Brook	A	7/1/71[1]	246 acres (watershed)

Village of Bellows Falls water supply. Ellis Brook and all waters in its watershed above the water intake, which is situated at elev. 715'MSL in the Town of Rockingham.

Farr Brook	A	7/1/71[1]	154 acres (watershed)

Village of Bellows Falls water supply. Farr Brook and all waters in its watershed above the water intake, which is located at elev. 710'MSL in the Town of Rockingham.

Minards Pond	A	7/1/71[1]	46 acres

Village of Bellows Falls water supply. Minards Pond and all waters in its watershed in the Town of Rockingham.

Unnamed tributary to Mill Brook	A	7/1/71[1]	1.7 miles

Village of Ascutney water supply. (Reserved for emergency use). Unnamed tributary to Mill Brook and all waters in its watershed above the water intake. The unnamed tributary is the first tributary to Mill Brook in the Town of Weathersfield.

Pleasant Valley Reservoir	A	3/21/68[1]	25 acres

Village of Brattleboro water supply. Pleasant Valley Reservoir and allwaters in its watershed in the Town of Brattleboro. (Also refer to the classification of Sunset Lake & Stickney Brook - Basin #11)

Mill Brook	A	3/21/68[1]	Approx. 3 miles

Kurn Hattin School water supply. (Reserved for emergency use). Mill Brook and all water within its watershed above the water intake in the Town of Westminster. The intake is located approx. 1.0 mile upstream of its confluence with the Connecticut River.

Wright, Upper Hurricane & Lower Hurricane Reservoir	A	7/1/71[1]	10.4 acres

Hartford Town water supply. Wright, Upper Hurricane and Lower Hurricane Reservoirs and all waters within their watersheds in the Town of Hartford.

B. <u>Entire Basin</u>

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-14. Classification of the Stevens-Wells-Waits-Ompompanoosuc Basin (Basin 14)

All waters within this basin are Class B except as provided for below:

A. Waits River

Waters	Class	Date	Approx. Miles/Acres
Mill Pond Brook	A	2/19/60	3.0 miles

Description

Village of Bradford water supply (Reserved for emergency use). Mill Pond Brook and all waters within its watershed above the intake dam in the Towns of Fairlee, Bradford and West Fairlee.

Artificial impoundment on South Peacham Hollow Brook	A	4/28/76[1]	No record

Peach Fire District #1 water supply (The intake has been removed, and thetown has gone to wells. No record of system anymore). An artificial impoundment on South Peacham Hollow Brook, and all waters within its watershed above the intake. The impoundment is located approx. 1/2 mile east of Fosters Road in the Town of Peacham.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-15. Classification of the Passumpsic Basin (Basin 15)

All waters within this basin are Class B except as provided for below:

A. Passumpsic River

Waters	Class	Date	Approx. miles/acres
Unnamed tributary to Miller Run including Mathewson Reservoir	A	4/28/76[1]	Approx. 1.5 miles

Description

Village of Lyndonville water supply (Reserved for emergency use). Unnamed tributary to Miller Run including Mathewson Reservoir and all

waters within their watersheds above the intake in the Towns of Lyndon and Sutton.

Unnamed tributary to Miller Run including Copeland Reservoir	A	4/28/76[1]	Approx. 1.5 miles

Village of Lyndonville water supply (Reserved for emergency use). Unnamed tributary to Miller Run including Copeland Reservoir and all waters within their watersheds above the intake in the Towns of Lyndon and Sutton.

Two unnamed tributaries to Sutton River	A	4/28/76[1]	0.8 mile

Unknown water supply. Town unnamed tributaries to the Sutton River, near W. Burke, and all waters within their watersheds above the Murray water system intakes.

Chandler Pond	A	4/28/76[1]	59 acres

Lyndonville Village water supply (Reserved for emergency use). Chandler Pond and all waters within its watershed in the Town of Wheelock. Wheelock Pond drains to the South Wheelock Branch.

Woodworth Reservoir	A	4/28/76[1]	No Record

Lyndonville water supply (Reserved for emergency use) Woodworth Reservoir and all waters within its watershed in the Town of Lyndon. Woodworth Reservoir flows to the South Wheelock Branch.

Stiles Pond	A	4/28/76[1]	5.5 miles 146 acres (Stiles Pond)

St. Johnsbury Village water supply. Stiles Pond and all **waters** within its watershed in the Town of Waterford. Stiles Pond is in the St. Johnsbury municipal forest and flows to the Moose River.

Danville Reservoir	A	4/28/76[1]	2.0 miles

Danville Fire District No. 1 water supply. Danville Reservoir on tributary of Brown Brook and all waters within its watershed in Danville.

B. <u>Entire Basin</u>

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-16. Classification of the Northern Connecticut Basin (Basin 16)

All waters within this basin are Class B except as provided for below:

A. Upper Connecticut River

Waters	Class	Date	Approx. Miles/Acres
Charles Brown Brook	A	7/1/71[1]	2.5 miles

Description

Village of Norwich water supply (Reserved for emergency use). Charles Brown Brook and all waters within its watershed above the water intake in the Town of Norwich.

Unnamed tributary to Connecticut River	A	7/1/71[1]	1.0 mile

Village of Newbury water supply. An unnamed tributary to the Connecticut River and all waters within its watershed above the water intake in the Town of Newbury. The tributary is approx. one mile south of Pulaski Mt. The intake is located approx. 0.7 mile upstream of its confluence with the Connecticut River.

Unnamed tributary to Connecticut River	A	7/1/71[1]	0.2 mile

Village of Bloomfield water supply. An unnamed tributary to the Connecticut River and all waters within its watershed above the water intake in the Town of Bloomfield. The intake is approx. 0.5 mile above"Basin Hole."

Unnamed tributary to Lake Morey	A	7/1/71[1]	1.1 miles

Village of Fairlee water supply (Reserved for emergency use). An unnamed tributary to Lake Morey and all waters in its watershed in the Town of Fairlee to the water intake dam, including a man-made impoundment.

B. Entire Basin

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

Section 4-17. Classification of the Memphremagog Basin (Basin 17)

All waters within this basin are Class B except as provided for below:

A. Lake Memphremagog and International Stream

Waters	Class	Date	Approx. miles/acres
Unnamed reservoir near Derby Line	A	7/1/71[1]	No record

Description

Derby Line water supply. An unnamed reservoir and all waters in its watershed in the Town of Derby.

May Pond Brook and May Pond	A	10/30/87	13 acres

Village of Barton water supply. May Pond Brook and all waters within its watershed in the Town of Barton above and including the water supply reservoir and May Pond. The reservoir is located approximately 3/4 mile upstream of the brook's confluence with Crystal Lake.

B. Black-Barton-Clyde Rivers

Unnamed tributary to the Black River	A	2/20/75[1]	1.0 mile

Coventry Fire District #1 water supply (Reserved for emergency use.) An unnamed tributary to the Black River and all waters within its watershed above the water intake in the Town of Coventry.

Unnamed tributary to Island Pond	A	2/20/75	1.0 mile

Town of Brighton water supply. An unnamed tributary to Island Pond and all waters within its watershed in the Town of Brighton above the water intake at approx. elev. of 1544.0'MSL. The tributary flows northerly to Island Pond.

Unnamed tributary to Lightning Brook	A	2/20/75	2.0 miles

Town of Brighton water supply. Two unnamed tributaries to an unnamed tributary to Lightning Brook and all waters in their watersheds in the Town of Brighton above the intakes. The main intake is at approx. elevation 1526.0'MSL, and the upper, more northerly intake is diverted to the main intake.

C. **Entire Basin**

All waters located above 2,500 feet altitude, National Geodetic Vertical Datum.	A	5/17/86	No record

APPENDIX A

Fish Habitat Designation

A. Warm Water Fish Habitat

All wetlands, except those designated as cold water fish habitat in paragraph B below, and the following waters are designated as warm water fish habitat for purposes of these rules:

1. Battenkill, Walloomsac, Hoosic Basin
   (a) Lake Hancock (Sucker Pond), Stamford
   (b) Thompsons Pond, Pownal

2. Poultney, Mettawee Basin
   (a) All waters west of Vermont Route 22A.
   (b) Austin Pond, Hubbardton
   (c) Beebe Pond, Hubbardton
   (d) Billings Marsh Pond, West Haven
   (e) Burr Pond, Sudbury
   (f) Coggman Pond, West Haven
   (g) Echo Lake (Keeler Pond) Hubbardton/Sudbury
   (h) Half Moon Pond, Hubbardton
   (i) Hinkum Pond, Sudbury
   (j) Lake Hortonia, Hubbardton/Sudbury
   (k) Inman Pond, Fair Haven
   (l) Lily Pond, Poultney
   (m) Little Pond, Wells
   (n) Love's Marsh, Castleton
   (o) Mill Pond (Parson's Mill Pond), Benson
   (p) Northeast Developer's Pond, Wells
   (q) Old Marsh Pond, Fair Haven
   (r) Pine Pond, Castleton
   (s) Poultney River from Carvers Falls in West Haven to its confluence with Lake Champlain
   (t) Sunrise Lake, Benson/Orwell

3. Otter Creek, Little Otter Creek and Lewis Creek Basin
   (a) All waters lying west of Vermont Route 22A and south of the City of Vergennes.
   (b) Brilyea East Pond, Addison
   (c) Brilyea West Pond, Addison
   (d) Chipman Lake (Tinmouth Pond), Tinmouth
   (e) Danby Pond, Danby
   (f) East Creek Site I, Orwell
   (g) Fern Lake, Leicester
   (h) Lemon Fair River
   (i) Mud Pond, Leicester

(j) Otter Creek from the outfall of the Proctor wastewater treatment facility in Proctor, to its confluence with Lake Champlain, except that portion between the Beldens Dam and the Huntington Falls Dam in New Haven/Weybridge.
(k) Richville Pond, Shoreham
(l) Stone Bridge Pond, Panton/Addison
(m) Wallingford Pond, Wallingford

4. Lower Lake Champlain Basin
(a) Lake Champlain south of the Crown Point Bridge.
(b) Lake Champlain, between the Crown Point Bridge and the Ferrisburg-Charlotte town boundary, where depths are less than 25 feet at Low Lake Level (93 feet NGVD) - June 1, through September 30, only.
(c) Perch Pond, Benson

5. Upper Lake Champlain Basin
(a) All streams, creeks and brooks lying with Grand Isle County.
(b) Lake Carmi, Franklin(c)
Lake Champlain, between the Ferrisberg-Charlotte town boundary and the Canadian boundary, where depths are less than 25 feet at Low Lake Level (93 feet NGVD) - June 1, through September 30, only.
(d) Cutler Pond, Highgate
(e) Holmes Creek, Charlotte,
(f) Indian Brook, Colchester from Vermont Routes 2 & 7 to its confluence with Lake Champlain
(g) Lake Iroquois, Hinesburg/Williston
(h) LaPlatte River from its confluence with Patrick Brook in Hinesburg extending downstream to the Spear Street extension bridge in Charlotte annually from the period June 1 through September 30, only
(i) Long Pond, Milton
(j) Lower Lake, (Lake Sunset), Hinesburg
(k) Malletts Creek, Colchester, from Vermont Routes 2 & 7 to its confluence with Lake Champlain
(l) Milton Pond, Milton
(m) Mud Creek Pond, Alburg
(n) Murr (Monroe) Brook, Shelburne
(o) Rock River from the Canadian boundary to its confluence with Lake Champlain
(p) Round Pond, Milton
(q) St. Albans Reservoir (N), Fairfax
(r) Stevens Brook, St. Albans

6. Missisquoi Basin
(a) Metcalf Pond, Fletcher
(b) Fairfield Pond, Fairfield
(c) Fairfield Swamp Pond, Fairfield

(d) Missisquoi River from the outfall of the Enosburg Falls wastewater treatment facility to the Swanton Dam Swanton

7. Lamoille Basin
   (a) Arrowhead Mountain Lake, Milton/Georgia
   (b) Flagg Pond, Wheelock
   (c) Halfman Pond, Fletcher
   (d) Hardwick Lake, Hardwick
   (e) Horse Pond, Greensboro
   (f) Lake Elmore, Elmore
   (g) Lamoille River from the Peterson Dam in Milton to its confluence with Lake Champlain - June 1, through September 30, only.
   (h) Long Pond (Belvidere Pond), Eden
   (i) Long Pond, Greensboro
   (j) Tuttle Pond, Hardwick
   (k) Wapanaki Lake, Wolcott

8. Winooski Basin
   (a) Berlin Pond, Berlin
   (b) Bliss Pond, Calais
   (c) Coits Pond, Cabot
   (d) Cranberry Meadow Pond, Woodbury
   (e) Curtis Pond, Calais
   (f) Gillett Pond, Richmond
   (g) Harwood Pond, Elmore
   (h) Molly's Pond, Cabot
   (i) North Montpelier Pond, East Montpelier/Calais
   (j) Richmond Pond, Richmond
   (k) Shelburne Pond, Shelburne
   (l) Sodom Pond, East Montpelier/Calais
   (m) Valley Lake (Dog Pond), Woodbury
   (n) Winooski River from Green Mountain Power Corporation #19, in Essex/Williston to its confluence with Lake Champlain - June 1, through September 30, only.

9. White River Basin
   (a) Lamson Pond, Brookfield
   (b) Silver Lake, Barnard

10. Ottauquechee, Black Basin
   (a) Black River from the Lovejoy Dam in Springfield to its confluence with the Connecticut River - June 1, through September 30, only.
   (b) Deweys Mill Pond, Hartford
   (c) Lake Ninevah, Mount Holly
   (d) Lake Pinneo, Hartford
   (e) North Hartland Reservoir, Hartland/Hartford
   (f) North Springfield Reservoir, Springfield/Weathersfield

(g) Ottauquechee River from the North Hartland Dam in Hartland to its confluence with the Connecticut River.

11. West, Williams, and Saxtons Basin
   (a) Burbee Pond, Windham
   (b) Cole Pond, Jamaica
   (c) Lily Pond, Londonderry
   (d) Lowell Lake, Londonderry

12. Deerfield Basin
   (a) Gates Pond, Whitingham
   (b) Grout Pond, Stratton
   (c) Howe Pond, Readsboro
   (d) Jacksonville Pond, Whitingham
   (e) North Pond, Whitingham
   (f) Sadawaga Pond, Whitingham
   (g) Shippee Pond, Whitingham

13. Lower Connecticut, Mill Brook Basin
   (a) Lake Runnemede (Evart's Pond), Windsor
   (b) Lily Pond, Vernon
   (c) Mindards Pond, Rockingham

14. Stevens, Wells, Waits, Ompompanoosuc Basin
   (a) Lake Abenaki, Thetford
   (b) Ticklenaked Pond, Ryegate
   (c) Waits River from the CVPS Dam in Bradford to its confluence with the Connecticut River - June 1, to September 30.

15. Passumpsic Basin
   (a) Bruce Pond, Sheffield
   (b) Chandler, Wheelock
   (c) Keiser Pond, Peacham/Danville

16. Upper Connecticut, Nulhegan, Willard Stream, Paul Stream Basin
   (a) Dennis Pond, Brunswick
   (b) Halls Lake, Newbury
   (c) Harriman Pond, Newbury
   (d) Lake Morey, Fairlee
   (e) Lower Symes Pond, Ryegate
   (f) Stevens Pond, Maidstone

17. Lake Memphremagog, Black, Barton, Clyde, Coaticock, Basin
   (a) Daniels Pond, Glover
   (b) Lake Derby, Derby
   (c) Long Pond, Sheffield
   (d) Little Hosmer Pond, Craftsbury
   (e) Mud Pond, Craftsbury

(f) Mud Pond, (North) Morgan
(g) Tildy's Pond (Clark Pond), Glover
(h) Toad Pond, Charleston
(i) Turtle Pond, Holland

B. Cold Water Fish Habitat

1. All waters not designated as warm water fish habitat by subsection A are hereby designated as cold water fish habitat for purposes of these rules.
2. The following wetlands are designated as cold water fish habitat:
   (a) Those wetlands adjacent to the Dog River and its tributaries from the headwaters of the Dog River to the point where it first crosses State Aid highway #62 in Roxbury, a distance of approximately 1.5 miles.
   (b) Those wetlands adjacent to the headwaters of the Winhall River and its tributaries on the east and west side from the outlet of Stratton Pond to the Stratton-Winhall boundary, a distance of approximately 2.0 miles.
   (c) Those wetlands adjacent to the Batten Kill River from a point .75 miles north of East Dorset and extending to its confluence with Dufresne Pond in Manchester, a distance of approximately 5.5 miles.
   (d) Those wetlands adjacent to the New Haven River and its tributaries from its confluence with Blue Bank Brook in Lincoln upstream to the headwaters of the respective tributaries, a distance of approximately 1.75 miles.

Appendix B - Phosphorus Criteria (§ 3-01(B)(3)(c)
Description of Lake Champlain and Lake Memphremagog segments.

Segment	Description
Lake Champlain Missisquoi Bay	Area north of East Alburg (Route 78) bridge and south of the international border.
Isle La Motte	Area within Vermont waters west of Grand Isle and North Hero Islands, and north of a line from Cumberland Head, NY to Wilcox Point on Grand Isle.
St. Albans Bay	Area northeast of a line from Hathaway Point to Lime Rock Point.
Northeast Arm	Area within Vermont Waters east of Grand Isle and North Hero Islands, and north of the Sandbar Bridge, excluding St. Albans Bay, and including the large bays on Grand Isle and North Hero.
Malletts Bay	Area south of Sandbar Bridge and east of the causeway from Colchester Point to Grand Isle.
Main Lake	Area within Vermont waters south of a line from Cumberland Head, NY to Wilcox Point on Grand Isle, and north of a line from Split Rock Point, NY to Thompsons Point, VT, excluding Malletts Bay, Burlington Bay and Shelburne Bay.
Burlington Bay	Area east of a line from Lone Rock Point to Oakledge.
Shelburne Bay	Area south of a line from Shelburne Point to Red Rock Point.

Otter Creek	Area within Vermont waters south of a line from Split Rock Point, NY to Thompsons Point, VT, and north of a line from Rock Harbor, NY to Basin Harbor, VT.
Port Henry	Area within Vermont waters south of a line from Rock Harbor, NY to Basin Harbor, VT, and north of Crown Point Bridge.
South Lake A	Area within Vermont waters south of Crown Point Bridge and north Benson Landing.
South Lake B	Area within Vermont waters south of Benson Landing.
Lake Memphremagog	
Main Lake	Area within Vermont waters north of the Route 5 Bridge.
South Bay	Area south of the Route 5 bridge and north of the mouth of the Barton River.

Compound	CAS Number	Carcinogenic	For Consumptio.	
			water & organisms (ug/l unless indicated otherwise)	organisms only (ug/l unless indicated otherwise)
Acrolein	107028	No	320	780
Acrylonitrile	107131	Yes	0.059	0.66
Aldrin	309002	Yes	0.00013	0.00014
Antimony	7440360	No	14	4,300
Arsenic	7440382	Yes	0.02	1.5
Asbestos	1332214	Yes	$70x10^5$f/l	-
Benzene	71432	Yes	1.2	71
Benzidine	92875	Yes	0.00012	0.00054
Carbon Tetrachloride	56235	Yes	0.25	4.4
Chlordane	57749	Yes	0.00057	0.00059
Chloroethyl ether (Bis-2)	111444	Yes	0.031	1.4
Chloroisopropyl ether (Bis-2)	108601	Yes	1,400	170,000
Chloroform	67663	Yes	5.7	470
Cyanide	57125	No	700	220,000
4,4'-DDT	50293	Yes	0.00059	0.00059
4,4'-DDE	72559	Yes	0.00059	0.00059
4,4'-DDD	72548	Yes	0.00083	0.00084
Di-n-butyl Phthalate	84742	No	2,700	12,000
1,2-Dichlorobenzene	95501	No	2700	17,000
1,3-Dichlorobenzene	541731	No	400	2,600
1,4-Dichlorobenzene	106467	No	400	2,600

Compound	CAS Number	Carcinogenic	For Consumption of:	
			water & organisms (ug/l unless indicated otherwise)	organisms only (ug/l unless indicated otherwise)
3,3'-Dichlorobenzidine	91941	Yes	0.04	0.077
1,2-Dichloroethane	107062	Yes	0.38	99
1,1-Dichloroethylene	75354	Yes	0.057	3.2
2,4-Dichlorophenol	120832	No	93	790
1,3-Dichloropropylene	542756	No	10	1700
Dieldrin	60571	Yes	0.00014	0.00014
Diethyl Phthalate	84662	No	23,000	120,000
Bis(2-Ethylhexyl)Phthalate	117817	Yes	1.8	5.9
Dimethyl Phthalate	131113	No	313,000	2,900,000
2,4 Dinitrophenol	51285	Yes	70	14000
2-Methyl-4,6-Dinitrophenol	534521	No	13.4	765
2,4-Dinitrotoluene	121142	Yes	0.11	9.10
Dioxin (2,3,7,8-TCDD)	1746016	Yes	0.13×10^{-7}	0.14×10^{-7}
1,2-Diphenylhydrazine	122667	No	0.040	0.54
alpha-Endosulfan	959988	No	0.93	2.0
beta-Endosulfan	33213659	No	0.93	2.0
Endosulfan Sulfate	1031078	No	0.93	2.0
Endrin	72208	No	0.76	0.81
Endrin Aldehyde	7421934	No	0.76	0.81
Ethylbenzene	100414	No	3100	29,000
Bromoform	75252	Yes	4.3	360

Compound	CAS Number	Carcinogenic	For Consumption of:	
			water & organisms (ug/l unless indicated otherwise)	organisms only (ug/l unless indicated otherwise)
Chlorodibromomethane	124481	Yes	0.41	34
Dichlorobromomethane	75274	Yes	0.27	22
Methyl Bromide	74839	No	48	4000
Methylene Chloride	75092	Yes	4.7	1600
Heptachlor	76448	Yes	0.00021	0.00021
Heptachlor Epoxide	1024573	Yes	0.00010	0.00011
Hexachlorobenzene	118741	Yes	0.00075	0.00077
Hexachlorobutadiene	87683	Yes	0.44	50
Hexachlorocyclohexane-Alpha	319846	Yes	0.0039	0.013
Hexachlorocyclohexane-Beta	319857	Yes	0.014	0.046
Hexachlorocyclohexane-Gamma (Lindane)	58899	Yes	0.019	0.063
Hexachlorocyclopentadiene	77474	No	240	17000
Hexachloroethane	67721	Yes	1.9	8.9
Isophorone	78591	No	8.4	600
Mercury	7439976	No	0.14	0.15
Monochlorobenzene	108907	No	680	21,000
Nickel	7440020	No	610	4600
Nitrobenzene	98953	No	17	1,900
N-Nitrosodimethylamine	62759	Yes	0.00069	8.1
N-Nitrosodiphenylamine	86306	Yes	5.0	16

Compound	CAS Number	Carcinogenic	For Consumption of:	
			water & organisms (ug/l unless indicated otherwise)	organisms only (ug/l unless indicated otherwise)
Pentachlorophenol	87865	Yes	0.28	8.2
Phenol	108952	No	21,000	4.6×10^6
PCB-1242	53469219	Yes	0.000044	0.000045
PCB-1254	11097691	Yes	0.000044	0.000045
PCB-1221	11104282	Yes	0.000044	0.000045
PCB-1232	11141165	Yes	0.000044	0.000045
PCB-1248	12672296	Yes	0.000044	0.000045
PCB-1260	11096825	Yes	0.000044	0.000045
PCB-1016	12674112	Yes	0.000044	0.000045
Anthracene	120127	No	9600	110,000
Benzo(a)Anthracene	56553	Yes	0.0028	0.031
Benzo(a)Pyrene	50328	Yes	0.0028	0.031
Benzo(b)Fluoranthene	205992	Yes	0.0028	0.031
Benzo(k)Fluoranthene	207089	Yes	0.0028	0.031
Chrysene	218019	Yes	0.0028	0.031
Dibenzo(a,h)Anthracene	53703	Yes	0.0028	0.031
Fluorene	86737	No	1300	14,000
Indeno(1,2,3-cd)Pyrene	193395	Yes	0.0028	0.031
Pyrene	129000	No	960	11,000
Fluoranthene	206440	No	300	370
1,1,2,2-Tetrachloroethane	79345	Yes	0.17	11

Compound	CAS Number	Carcinogenic	For Consumption of:	
			water & organisms (ug/l unless indicated otherwise)	organisms only (ug/l unless indicated otherwise)
Tetrachloroethylene	127184	Yes	0.8	8.85
Thallium	7440280	No	1.7	6.3
Toluene	108883	No	6,800	200,000
Toxaphene	8001352	Yes	0.00073	0.00075
1,1,2-Trichloroethane	79005	Yes	0.60	42
Trichloroethylene	79016	Yes	2.7	81
2,4,6-Trichlorophenol	88062	Yes	2.1	6.5
Vinyl Chloride	75014	Yes	2	525

Criteria are in micrograms/liter (parts per billion) unless otherwise noted; f = fibers/liter

Carcinogenic - for those toxic substances which are identified as carcinogens the criteria have been established at a risk level of 10^{-6} assuming a lifetime exposure to a 70 Kg male consuming 6.5 grams per day of fish and shell-fish products and ingesting 2.0 liters of water per day.

- for those toxic substances which are identified as noncarcinogens the criteria are best estimates of concentrations which are not expected to produce adverse effects in human health assuming a lifetime exposure to a 70 Kg male consuming 6.5 grams per day of fish and shell-fish products and ingesting 2.0 liters of water per day.

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Appendix D: Water Quality Criteria for the Protection of Aquatic Organisms

Compound	CAS Number	Maximum Allowable Concentration Acute Criteria (µg/l) [a.]	Average Allowable Concentration Chronic Criteria (µg/l) [a.]
Aldrin [b.]	309002	3.0	----------
Ammonia [c.]	NA	see EPA water quality criteria document for Ammonia	
Arsenic [d.]	7440382	360	190
Cadmium [d. e.]	7440439	exp(1.128(ln hardness)-3.828)	exp(0.7852(ln hardness)-3.490)
Chlordane [b.]	57749	2.4	.0043
Chlorine [c.]	7782505	19	11
Chlorpyrifos [c.]	2921882	0.083	0.041
Chromium (VI) [d.]	18540299	16	11
Chromium (III) [d. e.]	16065831	exp(0.8190(ln hardness)+3.688)	exp(0.8190(ln hardness)+1.561)
Copper [d. e.]	7440508	exp(0.9422(ln hardness)-1.464)	exp(0.8545(ln hardness)-1.465)
Cyanide	57125	22	5.2
DDT [b.]	50293	1.1	0.001
Demeton [c.]	8065483	----------	0.1
Dieldrin [b.]	60571	2.5	0.0019
alpha-Endosulfan [b.]	959988	0.22	0.056
beta-Endosulfan [b.]	33213659	0.22	0.056
Endrin [b.]	72208	0.18	0.0023
Heptachlor [b.]	76448	0.52	0.0038
Heptachlor Epoxide [b.]	1024573	0.52	0.0038
Hexachlorocyclohexane (Lindane)	58899	2.0	0.8
Iron [c.]	NA	----------	1,000
Lead [d. e.]	7439921	exp(1.273(ln hardness)-1.460)	exp(1.273(ln hardness)-4.705)
Malathion [c.]	121755	----------	0.1
Mercury [d. f.]	7439976	2.4	0.012
Nickel [d. e.]	7440020	exp(0.8460(ln hardness)+3.3610)	exp(0.8460(ln hardness)+1.1645)

Compound	CAS Number	Maximum Allowable Concentration Acute Criteria (µg/l) [a.]	Average Allowable Concentration Chronic Criteria (µg/l) [a.]
Parathion [c.]	56382	0.065	0.013
Pentachlorophenol	87865	exp(1.005 (pH) - 4.830)	exp(1.005 (pH) - 5.290)
PCB-1242	53469219	----------	0.014
PCB-1254	11097691	----------	0.014
PCB-1221	11104282	----------	0.014
PCB-1232	11141165	----------	0.014
PCB-1248	12672296	----------	0.014
PCB-1260	11096825	----------	0.014
PCB-1016	12674112	----------	0.014
Selenium	7782492	20	5
Silver [d. e.]	7440224	exp(1.72(ln hardness)-6.52)	----------
Toxaphene	8001352	0.73	0.0002
Zinc [d. e.]	7440666	exp(0.8473(ln hardness)+0.8604)	exp(0.8473(ln hardness)+0.7614)

[a.] Maximum Allowable Concentration (MAC) = the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (1-hour average) without deleterious effects. Average Allowable Concentration (AAC) - the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. µg/l = micrograms per liter. The MAC is the equivalent to the Federal Criteria Maximum Concentration (CMC) and the AAC is equivalent to the Federal Criteria Continuous Concentration (CCC).

[b.] The aquatic life criteria for this compound we developed in 1980 using 1980 EPA guidelines for criteria development. the CMC or acute value shown is a final acute value (FAV) which by the 1980 guidelines is an instantaneous.

[c.] Compound is not listed in EPA's Section 304(a) Criteria for Priority Toxic Pollutants as published in the December 22, 1992, pages 60911-60917, of the Federal Register but is included in Appendix O of the Vermont Water Quality Standards because the pollutant can be deleterious to aquatic life and a criteria has been developed for the protection of aquatic organisms.

[d.] Criteria for this metal is expressed as a function of the water effect ratio, WER, as defined in 40 CFR 131-36(C).

CMC = acute criterion (µg/l) x WER
CCC = chronic criterion (µg/l) x WER

[e.] Aquatic life criteria for this metal is expressed as a function of total hardness (µg/l), and as a function of the pollutant's water effect ratio, WER, as defined in §131.36(c).

[f.] if the CCC for total mercury exceeds 0.012 µg/l more than once in a three year period in the ambient water, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level of 1.0 mg/Kg. If the FDA action level is exceeded, the EPA

Regional Administrator must be notified. A revision of the mercury criterion must be initiated in the States Water Quality Standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for its affected area.

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